

# Material Safety Data Sheet (MSDS)

## Section 1 - General Information

Product name	Dry Battery
Type No.	R03P
Manufacturer	Jiaxing Minimoon Battery Co., Ltd
Address	Nanhu Economic Zone Jiaxing, Zhejiang, China
Telephone number for information	+86-573-82615519
Date of prepared	2023-1-3
Period of validity	2025-12-31

## Section 2 - Hazardous Ingredients/Identity Information

Battery weight (g)		R03/36m 7.2g	R03/30m 7.0g
Description	Chemical Identity	Approximate % of total weight	Approximate % of total weight
Zinc Metal	Zn	33.3	30.3
Manganese Dioxide	MnO <sub>2</sub>	23.8	24.5
Zinc Chloride	ZnCl <sub>2</sub>	5.8	6.0
ammonium chloride	NH <sub>4</sub> Cl	0.9	0.9
Carbon	C	12.1	12.4
Water	H <sub>2</sub> O	15.5	15.9
CAS NO.	NH <sub>4</sub> Cl (CAS:12125-02-9) ; Zn (CAS: 7440-66-6 ) MnO <sub>2</sub> (CAS: 1313-13-9 ) ; C (CAS:7782-42-5) ZnCl <sub>2</sub> (CAS:7646-85-7) ; H <sub>2</sub> O (CAS:7732-18-5 )		

## Section 3 - Physical/Chemical Characteristics

Boiling Point	N.A.	Specific Gravity(H <sub>2</sub> O=1)	2
Vapor Pressure(mm Hg)	N.A.	Melting Point	N.A.
Vapor Density(AIR=1)	N.A.	Evaporation Rate	N.A.
Solubility in water	N.A.		
Appearance and Odor	Cylindrical Or Quadrate Shape, Odorless		

## Section 4 - Fire and Explosion Hazard Data

Flash Point	N.A.	Flammable Limits	LEL: N.A.
Extinguishing Media	N.A.		UEL: N.A.
Special Fire Fighting Procedures	N.A.		
Unusual Fire and Explosion Hazards	Do not dispose of battery in fire and recharge battery - may explode. Do not short-circuit battery - may cause burns.		

## Section 5 - Reactivity Data

Stability	Unstable		Conditions to Avoid: Do not heat, short circuit or recharge
	Stable	X	
Incompatibility(Material to Avoid): acid , oxidant			
Hazardous Decomposition Or Byproducts: N.A.			
Hazardous Polymerization	May Occur		
	Will Not Occur	X	

## Section 6 - Health Hazard Data

Route of Entry	Inhalation? N.A.	Skin? N.A.	Ingestion? N.A.
<b>Health Hazards (Acute and Chronic)/Toxicological information:</b> In case of electrolyte leakage, skin will be itchy when contamination with electrolyte. In contact with electrolyte can cause severe irritation and chemical burns. Inhalation of electrolyte vapors may cause irritation of the upper tract and lungs.			

## Section 7 - First Aid Procedures

<b>First Aid Procedures:</b> If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately. If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen(15) minutes, and contact a physician. If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.
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## Section 8 - Accidental Release or Spillage

<b>Steps to Be Taken in Case Material is Release or Spilled:</b> Batteries that are leakage should be handled with rubber gloves. Avoid direct contact with electrolyte. Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus.
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## Section 9 - Handling and Storage

## Safe Handling and Storage Advice

Batteries should be handling and storage carefully to avoid short circuits.  
Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.

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Never disassemble a battery.  
Do not breathe cell vapors or touch internal material with bare hand.  
Keep batteries between -20°C and 35°C for prolong storage..

## Section 10 - Exposure Controls/Personal Protection

Occupational Exposure Limit	LTEP	N.A.	STEP	N.A.
Respiratory Protection(Specify Type)		N.A.		
Ventilation	Local Exhausts	N.A.	Special	N.A.
	Mechanical(General)	N.A.	Other	N.A.
Protective Gloves	N.A.	Eye Protective	N.A.	
Other Protective Clothing or Equipment		N.A.		
Work / Hygienic Practices		N.A.		

## Section 11 - Toxicological Information

In case of electrolyte leakage, skin will be itchy when contamination with electrolyte.  
In contact with electrolyte can cause severe irritation and chemical burne.  
Inhalation of electrolyte vapors may cause irritation of the upper tract and lungs.

## Section 12 - Ecological Information

N.A.

## Section 13-Disposal Considerations

Dispose of batteries according to government regulations.

## Section 14 - Transport Information

These batteries are considered to be "Dry cell" batteries and unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states "Batteries, dry are not subject to the requirement of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). As of 1/1/97 IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

Special Provision A123 which states: "An electrical or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short circuit (e.g. in the case of battery, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation."

The International Marring Dangerous Goods Code (IMDG) regulate them from ocean transportation under Special Provision 304 which says: Dry batteries containing corrosive electrolyte which will not flow out of the battery if the batteries case is cracked are not subject to the Provision of this Code provided the batteries are securely packed and protected against short-circuits, Example of such batteries are: alkali-manganese, zinc-carbon, nickel metal hydride and nickel-cadmium batteries.

Non-dangerous goods.

Such battery has been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short circuit.

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## Section 15 - Regulatory Information

Special requirement be according to the local regulatory.

## Section 16 - Other Information

The data in this Material Safety Data Sheet only to the specific material designated herein.

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